

**Notice of Allowability**

Application No.

09/638,075

Examiner

Rodney G. McDonald

Applicant(s)

HANAWA ET AL.

Art Unit

1753

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to After Final Amendment filed 2-6-06.
2. ☒ The allowed claim(s) is/are 2-14,20-24,27,28,30-34 and 36-41.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
RODNEY G. MCDONALD  
PRIMARY EXAMINER

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Wallace on February 13, 2006.

The application has been amended as follows:

Claim 2, line 8, change "wafer support" to "workpiece support".

Claim 4, line 8, change "wafer support" to "workpiece support".

Claim 7, line 8, change "wafer support" to "workpiece support".

Claim 20, lines 3 and 4, change both occurrences of "wafer support" to "workpiece support".

Claim 21, line 3, change "wafer support" to "workpiece support".

Claim 23, line 8, change "wafer support" to "workpiece support".

Claim 24, line 5, change "wafer support" to "workpiece support".

Claim 31, lines 4 and 7, change both occurrences of "wafer support" to "workpiece support".

Claim 41, lines 5 and 6, change both occurrences of "wafer support" to "workpiece support".

The following is an examiner's statement of reasons for allowance:

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Claims 2, 3, 5 and 6 are allowable over the prior art of record because the prior art of record does not teach the claimed subject matter including wherein the hollow conduit comprises a plenum extending around an axis of symmetry of the chamber and wherein the opening is continuous in the enclosure extending around the axis of symmetry of the chamber.

Claims 4, 13, 14, 20-22, 30-33 and 37 are allowable over the prior art of record because the prior art of record does not teach the claimed subject matter including wherein the conduit is formed of a metal material, the conduit having an insulating gas within a wall of the conduit extending transversely to the torroidal path and separating the conduit into two portions so as to prevent formation of a closed electrical path along the length of the conduit.

Claims 7-12 are allowable over the prior art of record because the prior art of record does not teach the claimed subject matter including a first coil antenna adapted to accept RF power, and inductively coupled to the interior of the hollow conduit and capable of maintaining a plasma in the torroidal path; wherein the coil antenna is wound around an axis generally parallel with the axis of the closed torroidal path; wherein the coil antenna comprises a first winding extending on one side of and along the conduit; and wherein the coil antenna comprises a second winding extending on an opposite side of an along the conduit.

Claims 23, 24, 27, 28, 34, 36, 38-41 are allowable over the prior art of record because the prior art of record does not teach the claimed subject matter including wherein the height of the closed torroidal path along an axis is generally perpendicular

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to a plane of the wafer support in a process region overlying the workpiece support is less than elsewhere in the closed torroidal path, whereby to enhance the plasma ion density in the process region relative to the plasma ion density elsewhere in the closed torroidal path.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Rodney G. McDonald  
Primary Examiner  
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